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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/924,428

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Lei Wu

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EXAMINER

CHEU, CHANGHWA J

ART UNIT

PAPER NUMBER

1641

MAIL DATE

DELIVERY MODE

01/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/924,428

Applicant(s)

WU ET AL.

Examiner

Jacob Cheu

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,14,33,34,56,67,118-120 and 122-132 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,33,34,67,120 and 122-132 is/are rejected.
- 7) ☒ Claim(s) 14,56,67,118 and 119 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/27/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

2. Applicant's amendment filed on 11/27/2007 has been received and entered into record and considered.

The following information provided in the amendment affects the instant application:

1. Claims 1-12, 15-32, 35-55, 57-66, 68-117, 121 had been cancelled.
2. Claims 126-132 had been added to the instant application.
3. Currently, claims 13-14, 33-34, 56, 67, 118-120, 122-132 are under examination.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13-14, 33-34, 56, 67, 118-120, 122-132 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 13, it is not clear what is the relationship of the binding partner to the microdevice. In another word, it is not clear where the binding partner located. It appears from specification that the binding partner is immobilized on the substrate. Applicant needs to clarify it.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 13, 120, 122, 126-128, 130-132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye et al. in view of Wu et al. (US 6221677).

Kaye et al. teach a microdevice for combinational library screening. Kaye et al. teach that the microdevice comprises a substrate, a photorecognizing coding pattern on said substrate, and a binding partner for binding target molecule of interest (See page 6, line 5-15; page 2, line 1-5; Figure 2 and 5). The microdevice can be conjugated with *beads* where the interest of target is immobilized thereon for screening (See page 19, line 12-20; Figure 7, particular Figure 7b)(emphasis added). The target molecules immobilized on the microdevice, includes peptide, compounds, or oligonucleotides suitable for

combinatorial synthesis or analysis (See page 1, first paragraph; page 3-4). These peptides, compounds or oligonucleotides are inherent binding partners capable of being manipulated. The photorecognizable code taught by Kaye et al. consists of different shapes and forms, including hollows, grooves, or notches, which are holes not penetrating through the entire depth of the substrate (See page 6, line 5-15; Figure 2 and 5; *Particular Figure 2, second example, holes not penetrated through the substrate*)(emphasis added). Kaye et al. also teach use of silicon layer for the substrate (See Abstract). With respect to the dimensions, the microdevice taught by Kaye et al. can be within from 1 to 500 microns ranges (See page 9, last paragraph). The microdevice of Kaye et al. does not comprise an anodized metal surface layer (See page 10-15; Figure 2-5;). However, Kaye et al. do not disclose the features of having magnetic material on the microdevice.

Wu et al. teach immobilizing binding partner capable of being manipulated on the beads having magnetic materials (See Figure 4). The binding of the analyte can be separated or isolated by magnetic force. Supra.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have provided Kaye et al. with the magnetic beads as taught by Wu et al. in order to improve efficiency of separation or isolation of the modulated target molecules.

With respect to claim 126 and 130, Kaye et al. teach using a silicon dioxide layer on the substrate (See Abstract).

With respect to claim 127, Kaye et al teach use of aluminum for the microdevice (page 11, line 19-21).

With respect to claim 131, Kaye et al. teach that the thickness of the microdevice is about 10 microns (See page 21, last paragraph).

With respect to claim 132, Kay et al. teach that the substrate having surface area about 3000 squared microns (See page 21, last paragraph).

Response to Applicant's Arguments

4. The rejections of claims 122 and 125 under 35 USC 112, first paragraph 'New Matter' are withdrawn because Applicant had shown support from the specification (page 77-78).

35 USC 103 (a) under Kaye et al. in view of Wu et al.

5. Applicant argues that Kaye et al. reference does not teach using any force for manipulation of the microdevice. Further, Applicant argues that Wu et al. do not disclose using magnetic interaction. Therefore, the combination of both Kaye et al. and Wu et al. is not a proper prima facie obviousness under 35 USC 103 (a).

Applicant's arguments have been considered, but are not persuasive.

First, Examiner would like to draw Applicant's attention to the Figure 4 of Wu et al. reference. In Figure 4, particular component 25 is a bead having magnetic materials thereon. It is called "magnetic reporter beads" (Col. 7, line 1-10). Wu et al. teach applying the magnetic force to separate or isolate the target analytes on the reporter beads. Thus, the feature of magnetic materials is satisfied. Second, with respect to the remarks on no manipulative force is disclosed in Kaye et al. reference, such deficiency is remedied because the Wu et al. reference teaches so and the motivation is to use magnetic

force to improve separate or isolate target molecules in the combinatorial library synthesis as purported in Kaye et al. reference.

Allowable Subject Matter

6. Claims 14, 56, 67, 118, 119 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: no prior art teaches or suggests use of nickel alloy or CoTaZr(Cobalt-Tantalum-Zirconium)alloy for photorecognition microdevice. The closest prior art is the Kaye et al. reference, however Kaye et al. disclose gold, aluminum, silicon dioxide or polyamide or resin (See page 11, line 15-25). No nickel alloy or CoTaZr(Cobalt-Tantalum-Zirconium)alloy material is used or suggested.

Conclusion

7. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Cheu whose telephone number is 571-272-0814. The examiner can normally be reached on 9:00-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jacob Cheu
Examiner
Art Unit 1641



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